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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,729	10/22/2007	Kwang-Man Kim	21492-0003US1	5453

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EXAMINER
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ANDRISH, SEAN D

ART UNIT	PAPER NUMBER
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3672

NOTIFICATION DATE	DELIVERY MODE
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09/22/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/597,729	<b>Applicant(s)</b> KIM ET AL.	
	<b>Examiner</b> SEAN D. ANDRISH	<b>Art Unit</b> 3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 - 7 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 August 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____.      |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                            |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input checked="" type="checkbox"/> Other: <u>NPL document; foreign patent documents.</u> |



## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "206" has been used to designate both "right connection pipe" and "binding steel member" and reference character "200" has been used to designate both "PHC pipe" and "connection bar".

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "24" and "204" have both been used to designate "left connection pipe" and reference characters "200" and "220" have both been used to designate "connection bar".

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to because:

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- a. The connection pipes 204, 206 appear to be grooves or channels and not pipes. A pipe is defined as “a hollow tube” or “tubular or cylindrical object” (<http://www.merriam-webster.com/dictionary/pipe>).
- b. Fig. 8 requires phantom lines to illustrate that the fixing steel member 602 is located above sheath 252.
- c. As illustrated in Fig. 9, the bolts 604, 606 do not connect the fixing steel member 602 to any other structural element of the claimed apparatus.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 3 - 5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification fails to disclose how the binding steel member keeps the connection pipes from coming out of the PHC pile. It appears that the binding steel member helps to maintain the diameter of the PHC pile, but the binding steel member does not prevent the connection pipe from falling out of the opening in the sheath 252 in which the connection pipe is located.

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Holmes (942,142). Holmes discloses a retaining wall structure comprising: a pile (2); left and right connection pipes (14); a connection bar (16), both lateral ends of the connection bar are configured to serve as male bodies; connection pipe-reinforcing material (3); and an elongated binding member (metal arm 11) (Figs. 1, 2, 5, and 6; page 1, lines 47 - 51 and lines 71 - 72; page

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2, lines 1 - 3). Grooves (14) of Holmes are equivalent to the connection pipes of the present application, as best understood by the examiner.

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holmes in view of Kaneko (JP6240660). Holmes discloses all of the limitations of the above claim(s) except for cylindrical pipes and said metallic elongated binding member is composed of steel. Kaneko teaches a retaining wall comprising cylindrical pipes (abstract). It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus as disclosed by Holmes with the cylindrical pipes of Kaneko as a matter of design choice. Examiner takes official notice that it is well known in the art to use metal support structures comprised of steel.

11. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holmes in view of Kaneko as applied to claim 1 above, and further in view of Hiraga et al. (JP404306324).

Regarding claim 4, Holmes in view of Kaneko discloses all of the limitations of the above claim(s) except for a sheath. Hiraga et al. teaches a corrosion-proof cover material (3) (abstract) that is functionally equivalent to a waterproof sheath to improve the durability of the pile structure. It would have been considered obvious to one of ordinary skill in the art, at the

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time the invention was made, to have modified the structure as disclosed above with the corrosion-proof sheath as taught by Hiraga et al. to improve the durability of the pile structure.

Regarding claim 6, Holmes in view of Kaneko and further in view of Hiraga et al. discloses all of the limitations of the above claim(s) except for the first step of inserting waterproof material into inner semi-cylindrical grooves. Hiraga et al. teaches a corrosion-proof cover material (abstract) and it would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the structure as disclosed above to include the first step of applying the corrosion-proof material to the entire surface of the pile of the pile as disclosed above, including the grooves that form the connection pipe, to improve the durability of the pile structure.

12. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Holmes in view of Kaneko and Hiraga et al. as applied to claim 6 above, and further in view of Bullivant (5,320,453). Holmes in view of Kaneko and Hiraga et al. discloses all of the limitations of the above claim(s) except for attaching fixing steel members to the tops of the left and right connection pipes. Bullivant teaches a metal cap (12) for connecting pile sections (10) and a baffle (22) (Figs. 1 - 3) to provide additional structural support to resist bending stresses in the pile. Although the metal cap connects pile sections, it also serves to retain the structural support element (22) within the pile. It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the apparatus as disclosed above with the metal cap as taught by Bullivant to provide additional structural support to resist bending stresses in the pile.



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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEAN D. ANDRISH whose telephone number is (571)270-3098. The examiner can normally be reached on Mon - Fri, 7:30am - 5:00pm, Alternate Fri off, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (571) 272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John Kreck/  
Primary Examiner, Art Unit 3672

SDA  
9/16/2009